AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** An isolated mammalian cell comprising
   a. *Aspergillus nidulans* AlcR protein, which modulates transcription of operator-containing promoters in response to compounds being gaseous or liquid at cultivation temperature of said mammalian cell; and
   b. a promoter operatively linked to P_{alcA} operator sites specific for binding *Aspergillus nidulans* AlcR protein obtained by amplifying said operator sites from an P_{alcA} containing vector with oligonucleotides OWW58 (SEQ ID NO:1) and OWW59 (SEQ ID NO:2).

2. **(Previously Presented)** The mammalian cell of claim 1further comprising a nucleic acid encoding a desired protein functionally linked to said promoter operatively linked to the P_{alcA} operator sites specific for binding *Aspergillus nidulans* AlcR protein.

3. **(Previously Presented)** The mammalian cell of claim 1, wherein binding of the *Aspergillus nidulans* AlcR protein to operator-containing promoters is changed in response to compounds being gaseous at a cultivation temperature of said mammalian cell.

4. **(Previously Presented)** The mammalian cell of claim 1, wherein binding of the *Aspergillus nidulans* AlcR protein to operator-containing promoters is changed in response to compounds being liquid at a cultivation temperature of said mammalian cell.

5.-8. **(Cancelled)**

9. **(Previously Presented)** A non-human mammal comprising at least one mammalian cell as claimed in claim 1.

10. **(Withdrawn)** A method for adjusting the expression level of a desired protein in a mammalian cell as claimed in claim 2, comprising culturing said mammalian cell and modulating gene expression by administration of a compound for which transcription of the

OP operator-containing promoter and the responsive transcription factor RTF are responsive.

11. **(Withdrawn)** The method of claim 10, wherein the protein is selected from the group consisting of SEAP, a fluorescent protein, human growth hormone, alpha-interferon, beta-interferon, gamma-interferon, insulin, erythropoietin, tissue plasminogen activator, DNAse, a monoclonal antibody, Factor VIII, Factor VII, HAS, IL-2, glucagons, EGF, GCSF, GMCSF, thrombopoietin, gp160, HbSAg, a protein encoded by a tumor suppressor gene, and a protein encoded by a gene interfering with absorption, distribution, metabolism and excretion of compounds contained in tobacco smoke.

12. **(Withdrawn)** The method of claim 10, wherein the compound for modulating gene expression is selected from the group consisting of ketones, aldehydes, haloalkanes, alcohols, esters, amines, and ethers.

13. **(Withdrawn)** The method of claim 10, wherein the compound for modulating gene expression is selected from the group consisting of ethanol, methylamine, ethylamine, n-propylamine, n-butylamine, n-pentylamine, n-hexylamine, benzylamine, 2-butanone, ethanol, n-propanol, n-butanol, 2-propanol, 2-butanol, 2-methylbutyraldehyde, acetaldehyde, propanal, acetone, 2-butanone, 2-pentanone, 3-pentanone, cyclohexanone, glycoaldehyde, glyoxal, glyoxylate, ethylene glycol, ethanolamine, ethyl acetate, ethyl ether, and dicyclopropylketone, and compounds that are metabolized *in situ* to said members of the group.

14. **(Withdrawn)** The method of claim 10, wherein the compound for modulating gene expression is selected from the group consisting of ethanol, methylamine, ethylamine, n-propylamine, n-butylamine, n-pentylamine, n-hexylamine, benzylamine, 2-butanone, ethanol, n-propanol, n-butanol, 2-propanol, 2-butanol, 2-methylbutyraldehyde, acetaldehyde, propanal, acetone, 2-butanone, 2-pentanone, 3-pentanone, cyclohexanone, glycoaldehyde, glyoxal, glyoxylate, ethylene glycol, ethanolamine, ethyl acetate, ethyl ether, and dicyclopropylketone.

15. **(Withdrawn)** The method of claim 10, wherein the RTF comprises amino acid sequences related to or derived from non-mammalian proteins.

16. **(Withdrawn)** The method of claim 10 wherein the RTF is the *Aspergillus nidulans* AlcR protein and the compound for modulating gene expression is acetaldehyde.

17. **(Withdrawn)** A method for adjusting the expression level of a gene in a mammalian cell as claimed in claim 1, comprising
    a. functionally linking said gene to an OP-containing promoter,
    b. transferring said OP-containing promoter functionally linked to said gene into said mammalian cell, and
    c. inducing expression of said gene by activating said OP-containing promoter by administration of a compound for which the OP operator-specific responsive transcription factor RTF is responsive.

18. **(Withdrawn)** The method of claim 17, wherein the gene codes for a protein selected from the group consisting of SEAP, a fluorescent protein, human growth hormone, alpha-interferon, beta-interferon, gamma-interferon, insulin, erythropoietin, tissue plasminogen activator, DNAse, a monoclonal antibody, Factor VIII, Factor VII, HAS, IL-2, glucagons, EGF, GCSF, GMCSF, thrombopoietin, gp160, and HbSAg.

19. **(Withdrawn)** The method of claim 17, wherein the gene is a tumor suppressor gene.

20. **(Withdrawn)** The method of claim 17, wherein the gene is a gene interfering with absorption, distribution, metabolism and excretion of compounds contained in tobacco smoke.

21. **(Withdrawn)** The method of claim 17, wherein the compound for which the OP operator-specific responsive transcription factor RTF is responsive is selected from the group consisting of ketones, aldehydes, haloalkanes, alcohols, esters, amines, and ethers.

22. **(Withdrawn)** The method of claim 17 wherein the compound for which the OP operator-specific responsive transcription factor RTF is responsive is selected from the group consisting of ethanol, methylamine, ethylamine, n-propylamine, n-butylamine, n-pentylamine, n-hexylamine, benzylamine, 2-butanone, ethanol, n-propanol, n-butanol, 2-propanol, 2-butanol, 2-methylbutyraldehyde, acetaldehyde, propanal, acetone, 2-butanone, 2-pentanone, 3-pentanone, cyclohexanone, glycoaldehyde, glyoxal, glyoxylate, ethylene glycol, ethanolamine, ethyl acetate, ethyl ether, and dicyclopropylketone, and compounds that are metabolized *in situ* to said members of the group.

23. **(Withdrawn)** The method of claim 17 wherein the compound for which the OP operator-specific responsive transcription factor RTF is responsive is selected from the group consisting of ethanol, methylamine, ethylamine, n-propylamine, n-butylamine, n-pentylamine, n-hexylamine, benzylamine, 2-butanone, ethanol, n-propanol, n-butanol, 2-propanol, 2-butanol, 2-methylbutyraldehyde, acetaldehyde, propanal, acetone, 2-butanone, 2-pentanone, 3-pentanone, cyclohexanone, glycoaldehyde, glyoxal, glyoxylate, ethylene glycol, ethanolamine, ethyl acetate, ethyl ether, and dicyclopropylketone.

24. **(Withdrawn)** The method of claim 17 wherein the OP-containing promoter is an AlcR-specific OP site, RTF is the *Aspergillus nidulans* AlcR protein, and the compound for which RTF is responsive is acetaldehyde.

25. **(Withdrawn)** An isolated nucleic acid useful for constructing a mammalian cell as claimed in claim 1, comprising an RTF-encoding nucleic acid functionally linked to a promoter useful for expression of the RTF in said mammalian cell.

26. **(Withdrawn)** The isolated nucleic acid of claim 25 comprising an OP sequence functionally linked to a promoter or a fragment thereof useful for RTF-dependent gene expression in said mammalian cell.

27. **(Withdrawn)** The isolated nucleic acid of claim 25 further comprising genetic elements useful for construction of viral vectors.

28. **(Cancelled)**